

# CENTER FOR CELL SIGNALING

## CENTER

The Center for Cell Signaling was established in 1997 to identify new therapeutic targets and of new drug candidates for asthma, allergy, inflammation, and cancer. Each of these diseases arises because cells are communicating the wrong information, which can be fixed by disrupting incorrect messages and providing correct signals. The Center now has 21 participating faculty members from eight different departments at the University of Utah, 1 from BYU and 2 from USU, focusing their talents in a synergistic way to create and commercialize new technologies.

## TECHNOLOGY

The Centers' technologies focus on the synthesis and drug applications of new molecules involved in cell-cell communication, from controlling the biochemical pathways of signal transduction to designing instruments used to study these processes. Current developments include tools necessary for the elucidation of chemical pathways that regulate normal and abnormal cell responses. These tools include chemical synthesis, expression of recombinant proteins, preparation of monoclonal antisera, biomolecular interaction analysis, and phage display of high affinity peptides. New methods are being developed to assay for signal binding and processing proteins, utilizing high throughput screening.

## ACCOMPLISHMENTS

The Center faculty continues to excel in inventions - this year they filed 28 new invention disclosures and four full or provisional patents. So far two companies have been spun off from the Center. **Salus Therapeutics, Inc.**, (established in 1999) focuses on identifying ribozyme and antisense targets for specific diseases. The company has research collaborations with the Center and has received two SBIR awards for over \$850,000. **Echelon Research Laboratories**, spun-off in 1998 from the Center, markets reagents and kits for identifying oncogene activators and suppressors important in cancer diagnosis. The company also has R & D collaborations with the Center; received six SBIR/STTR awards for a total of over \$2 million, and has successfully licensed Center technologies, which are now in production.

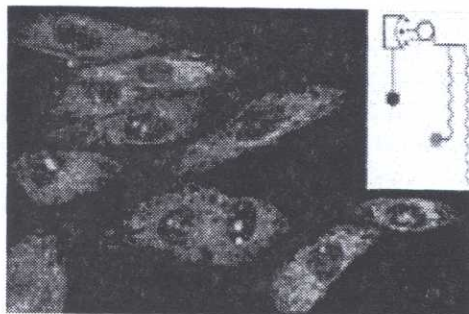
## CONTACT

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## Can You Imagine...

... a new class of pharmaceuticals that provide therapeutic effects by artificially signaling selected cells in the body to perform desired actions to the benefit of the patient?

THE CENTER DEVELOPS AND COMMERCIALIZES NEW TECHNOLOGIES FOCUSED ON THE TREATMENT OF CANCER, ALLERGY, ASTHMA AND INFLAMMATION.



Delivery of the phosphoinositide signaling molecule phosphatidylinositol 4,5-bisphosphate (fluorescently tagged green) and its carrier, histone (red), into NIH 3T3 fibroblast cells. Yellow regions indicate co-localization of both compounds (image courtesy of Joseph C. Shope). These images represent the science featured in a Proceeding of the National Academy of Sciences article entitled *Intracellular Delivery of Phosphoinositides and Inositol Phosphates Using Polyamine Carriers*, by S. Ozaki, D. DeWald, J. Shope, J. Chen, and G.D. Prestwich, which was published in October 2000. The study of cellular phosphoinositide signaling events exemplifies the strong collaboration between CCS members Prestwich at the University of Utah and DeWald at Utah State University.